

Docket No.: 03-18 US

IN THE SPECIFICATION**Please replace the paragraph beginning on page, 4, line 30 with the following:**

Apparatus for leak detection in accordance with a first embodiment of the invention is shown in fig. 2. A test piece 110 having a test volume 111 is attached to an inlet flange 112. Inlet flange 112 defines a test port of a leak detector and is connected through a test valve 136 to a test line 114. A forepump 116 has an inlet coupled to test line 114 for pumping of test line 114 and test volume 111. The leak detector further includes a turbopump 120, a mass spectrometer 122, a foreline valve 124, a midstage valve 138, a trace gas permeable member 130, a controller 132 and associated conduits. Mass spectrometer 122 has an inlet 162 coupled to an inlet of ~~vacuum pump~~ turbopump 120. A foreline 140 of turbopump 120 is coupled through foreline valve 124 to test line 114. An optional midstage line 142 of turbopump 120 is coupled through midstage valve 138 to test line 114.

Please replace the paragraph beginning on page, 5, line 26 with the following:

Quartz, or silica glass, is an example of a material that is permeable to helium. In particular, the helium permeability of quartz varies with temperature. at elevated temperatures in the range of 300°C to 900°C, quartz has a relatively high helium permeability. At room temperature, quartz has a relatively low helium permeability. As further shown in fig. 2a, the leak detector may be provided with a heating element 154 in thermal contact with quartz permeable member 130. Heating element 154 may be energized by controller 132 to increase the helium permeability of quartz permeable member 130. By controlling the temperature of permeable member 130, a helium window is provided. At a relatively high temperature (e.g. 300°C to 900°C), helium permeability is high and the helium window is open. At a relatively low temperature (e.g. room temperature), helium permeability is low and the helium window is closed. Other suitable trace gas permeable member materials include polymers, such as tetrafluoroethylene, known under the trade name ~~teflon~~ TEFLON®.